

What is claimed is:

1. A method of forming a coating on an optical fiber comprising the steps of:

providing a light-curing resin on a coating forming portion of an optical fiber; and

irradiating with a light for curing the light-curing resin which has been heated up to a glass transition temperature of the resin or other heat setting temperatures.

2. The method of forming a coating on the optical fiber according to claim 1,

wherein in heating the light-curing resin, a heating preset temperature is maintained for a predetermined set period of time after having reached the glass transition temperature or the other heat setting temperatures that is a predetermined preset temperature set by a temperature of the light-curing resin due to a temperature rise caused by heating, and

in irradiating the light for curing, irradiation is continuously conducted from a start time of heating for temperature rise toward said heating preset temperature to the end of said set period of time to maintain the heating preset temperature.

3. The method of forming a coating on the optical fiber according to claim 1 comprising setting the coating forming

264 / portion of the optical fiber inside a mold, and filling the light-curing resin in the mold to provide the light-curing resin on the coating forming portion of the optical fiber, wherein said mold is heated to a temperature for enhancing flowability of the light-curing resin when the light-curing resin is filled in the mold.

4. A apparatus for forming a coating on an optical fiber comprising:

a mold for coating with a light-curing resin a portion on which a coating is to be formed of an optical fiber;

a heating-and-cooling unit for selectively heating and cooling the light-curing resin inside said mold;

a temperature sensor for detecting the temperature of said light-curing resin;

a light source for irradiating said light-curing resin with a light for curing; and

a temperature control unit for controlling said heating-and-cooling unit by a temperature detecting output of said temperature sensor to control temperatures of said light-curing resin,

wherein said temperature control unit heat-controls said light-curing resin to a glass transition temperature or other heat setting temperatures when irradiating said light-curing resin with the light for curing and cool-controls said

light-curing resin after stopping light irradiating.

5. The apparatus for forming the coating on the optical fiber according to claim 4, wherein a Peltier element is used as the heating-and-cooling unit.

6. The apparatus for forming a coating on the optical fiber according to claim 5, wherein the heating-and-cooling unit includes a heater for heating and an additional unit for cooling in addition to the Peltier element.

7. The apparatus for forming a coating on the optical fiber according to claim 6, wherein the additional unit for cooling comprises a fan or a heat pipe.

8. The apparatus for forming a coating on the optical fiber according to claim 4 further comprising:

a tank for storing the light-curing resin to be injected into the mold;

a tube and a pump for injecting the light-curing resin from said tank to said mold,

wherein each of said tube, pump and tank is provided with a heater and a temperature sensor, and

the temperature control unit controls the heaters of said tube, pump and tank in accordance with a temperature detecting output of each of said corresponding temperature sensors for

enhancing flowability of the light-curing resin to be injected
into the mold.

090604.1 060004